

THE NORTH AMERICAN VARIETIES OF *VOLUCELLA*
BOMBYLANS LINN.

BY CHARLES W. JOHNSON.

Boston Society of Natural History.

My paper entitled, "The *Volucella bombylans* Group in America" (Psyche, 1916, vol. 23, p. 159-163), was written primarily to encourage a study of this group and of their relation to the various species of *Bombus* or *Bremus*. My system of naming in the above paper might deserve some criticism from a strictly nomenclatorial standpoint. I have therefore in the following table and notes endeavored to correct an error and to make more clear my views on the relationship of these various forms.

Volucella facialis Will. cannot be satisfactorily separated from the var. *plumata* of Europe, but as the typical *bombylans* is absent in America, it seems best to recognize *facialis* as a subspecies. I am also considering the eastern *evecta* and the Labrador *arctica* as subspecies, and the other forms as varieties of these subspecies.

The question naturally arises, are these variations worthy of distinct names, especially when European authors have placed twenty-four names (including the American *evecta*, *sanguinea* and *facialis*) in the synonymy under *bombylans*? Ignoring variation, when it exists in such a widely distributed species, does little to encourage a study of this most interesting syrphid. If certain forms do actually resemble the species of *Bombus* in whose nests it is commensal, then a knowledge of the possible limits and distribution of these variations is essential for a biological study,

Table of subspecies and varieties.

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|----|---------------------------------------------------------------------------------------------------------------------|---|
| 1. | Face yellow, with yellow pile. | 2 |
| | Face black or dark brown, with yellow pile. | 3 |
| 2. | Dorsum of the thorax and the pleura black pilose, third abdominal segment black pilose (Calif. to Alaska).. | |
| | subsp. <i>facialis</i> Will. | |

Dorsum of thorax black pilose, pleura yellow pilose, third abdominal segment black pilose (N. H. to Newfoundland:..

var. *lateralis* Johns.

Dorsum of thorax black pilose, pleura yellow pilose, posterior margin of the second and a large dorsal spot on the third abdominal segment red, bearing reddish pile (Col., Utah, N. M.). var. *rufomaculata* Jones.

3. Antennæ dark brown, thorax with the pile in front of a line between the base of the wings black in the ♂ and mixed with yellow in the ♀, abdomen entirely yellow pilose (Labrador). subsp. *arctica* Johns.

Antennæ red, pile of the thorax and pleura entirely yellow, first and second and the fourth and fifth segments of the abdomen with yellow or red pile (Eastern U. S.).

subsp. *evecta* Walker.

Abdomen with the pile of the first and second segments yellow, the others entirely black. . . . var. *americana* Johns.

Abdomen with pile on the first and second yellow, a portion of the third segment reddish pilose, and the remaining segments with either red or yellow pile.

var. *sanguinea* Will.

***Volucella bombylans facialis* var. *lateralis* Johnson.**

V. plumata Macq., Dipt. Exot., 4, Suppl. p. 131, 1844.

V. bombylans form *lateralis* Johns., Psyche, vol. 23, p. 161, 1916.

This is the eastern representative of *facialis* distinguished chiefly by having the pile of the pleura yellow. The variety is quite common at Mt. Desert and the only form I have taken on the island. It belongs to the Canadian zone.

***Volucella bombylans facialis* var. *rufomaculata* Jones.**

V. bombylans form *sanguinea* Johnson (*non* Williston), Psyche, vol. 23, p. 162, 1916.

V. rufomaculata Jones, Ann. Ent. Soc. Amer., vol. 10, p. 227, 1917.

This was referred to *sanguinea* in my previous paper, on the strength of the reddish pile on the abdomen. Since then I have

received a specimen from Pennsylvania referable to *evecta* with reddish pile on the third segment, which indicates that Williston probably had eastern specimens before him. *Rufomaculata* seems to be peculiar to the more elevated portions of the Rocky Mountains.

***Volucella bombylans arctica* Johnson.**

V. bombylans from *arctica* Johns., Psyche, vol. 23, p. 163, 1916.

With only the American forms for comparison I would have considered this a distinct species, but it resembles so closely specimens in my collection from the Alai Mountains, Turkestan, received under the name *V. hæmorrhoidalis* Zett., that it seems best to consider it an arctic subspecies of this circumboreal species. Types from Rama and Nain, Labrador.

***Volucella bombylans evecta* Walker.**

V. evecta Walker, Ins. Saund. Dipt., p. 251, 1856.

Walker's description calls for a form with—head black, antennæ reddish, thorax thickly clothed with "tawny hairs," abdomen with black hairs, with two bands of "tawny hairs, one band at base paler than the other which is near the tip." Walker does not clearly define the difference between a light yellow and a reddish yellow so that the pile on the posterior segments of *evecta* may be either yellow or reddish. In actual use the word tawny covers many shades of color from pale ochre to swarthy brown. *Evecta* is the upper austral form extending through the transition zone.

***Volucella bombylans evecta* var. *americana* Johnson.**

V. bombylans form *americana* Johns., Psyche, vol. 23, p. 162, 1916.

This is the more common form, the typical *evecta* being less frequently taken in New England.